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09/749,125	12/26/2000	Kiyoyuki Chinzei	F0284 KWI	4997

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EXAMINER

BINDA, GREGORY JOHN

ART UNIT

PAPER NUMBER

3679

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/749,125

Applicant(s)

CHINZEI, KIYOYUKI

Examiner

Greg Binda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 2, 3, 5-10, 12, 14 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 11, 13, 15 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

*Election/Restrictions*

2. Claims 2, 3, 5-10, 12, 14 & 16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant traversed the restriction (election) requirement in papers filed on May 2, 2003.

*Drawings*

3. The drawings received on May 8, 2003 have been accepted for examination purposes. However, objections in the Notice of Draftsperson's Patent Drawing Review, PTO-948, attached to the Office action mailed November 3, 2003 are outstanding.

*Claim Objections*

4. Claims 1, 4, 11, 13 & 15 are objected to because:
  - a. Claims 1, 4, 11, 13 & 15, lines 2 "a" should precede "surgical".
  - b. Claim 13 recites the limitation "said first spherical bearing" in line 8. There is insufficient antecedent basis for this limitation in the claim.
  - c. Claim 13 recites the limitation "said second spherical bearing" in line 10. There is insufficient antecedent basis for this limitation in the claim.

- d. Claim 13, line 30 and claim 15, line 28 recite the phrase "to enable to position" but its not clear what that means.
- e. Claim 15 recites the limitation "said first support" in line 8. There is insufficient antecedent basis for this limitation in the claim.
- f. Claim 15 recites the limitation "said second support" in line 10. There is insufficient antecedent basis for this limitation in the claim.

*Claim Rejections - 35 USC § 112*

- 5. Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 17 recites the limitation, "a configuration to minimize . . . electrical noise radiation" in lines 6-8. Applicant has not pointed out where this limitation is supported, nor does there appear to be a written description of the limitation in the application as originally filed.

*Claim Rejections - 35 USC § 102*

- 6. Claims 1, 4, 11, 13, 15 & 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al, US 5,853,328 (Kobayashi). Fig. 8 shows a link mechanism which is part of a robot arm comprising: an axial rod A; a first spherical bearing D extending from a first manipulator E; and a second spherical bearing B extending from a second manipulator C. Each of the bearings D & B is attached to the rod A. The two bearings D & B are capable of changing

positions relative to each other. The motion of the first bearing D relative to the axial rod A along the axis is constrained (see "fixed" in col. 1, line 21), but the first bearing D can move relative to the second bearing B because the first bearing is housed in a wheel E which imparts movement to the first bearing D relative to the second bearing B (i.e. when the wheel E travels over a bump or the tire of wheel E deflates or inflates). The second bearing B can travel along the axial rod A (see "slide-type" in col. 1, line 20) relative to the first bearing D. The position of the second bearing B and the direction of an arm C are defined by a coordinate values of the first spherical bearing D and the position of the second spherical bearing B relative to the first bearing D. Each manipulator E & C has a configuration to minimize magnetic susceptibility and electrical noise radiation. In col. 1, line 14, Kobayashi discloses a drive mechanism to position and direct each of the first and second manipulators E & C.

7. Claims 4 & 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Parker, US 2,124,006. Figs. 1 & 2 show a link mechanism comprising: an axial rod 24 and two supports 20, 21 & 27, the two supports being capable of changing positions. The motion of the first support 20, 21 relative to the axial rod 24 along the axis is constrained, but the first support 20, 21 can move relative to the second support 27 because the first support is attached to a base 10 which imparts movement to the first support 20, 21 relative to the second bearing 27 (i.e. when the base 10 vibrates). The second support 27 can travel along the axial rod 24. The position of the second support 27 and the direction of an arm 64 are defined by a coordinate values of the first spherical support 20, 21 and the position of the second support 27 relative to the first support 20, 21. On page 2, col. 2, lines 15+ and in Fig. 1, the link mechanism is disclosed as part of an end effector.

8. Claims 4 & 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Hendrickson, US 1,149,762. Figs. 1-3 show a link mechanism which is part of a robot arm comprising: an axial rod 7 and two supports 6 & 9, the two supports being capable of changing positions. The motion of the first support 6 relative to the axial rod 7 along the axis is constrained, but the first support 6 can move relative to the second support 9 because the first support 6 is attached to a drum D which imparts movement to the first support 6 relative to the second bearing 9 whenever the drum D is moved. The second support 9 can travel along the axial rod 7 (see "slidably engaged" on page 1, line 83). The position of the second support 9 and the direction of an arm 14 are defined by a coordinate values of the first spherical support 6 and the position of the second support 9 relative to the first support 6.

9. Claims 1, 4, 11, 13, 15 & 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Pritschow et al, US 5,916,328 (Pritschow). Fig. 1 shows a link mechanism K comprising: an axial rod VE and two spherical bearings P & P', the two bearings being capable of changing positions. The motion of the bearing P relative to the axial rod VE along the axis is constrained and the other bearing P' can travel along the axial rod VE. In col. 5, lines 54-56 the link mechanism K is disclosed as part of an end effector. Fig. 1 shows the first bearing P extending from first manipulator VA1-VA4 and the second bearing P' extending from a second manipulator VA5, VA6. Fig. 1 shows each manipulator VA1-VA6 has a configuration to minimize magnetic susceptibility and electrical noise radiation. Fig. 1 shows a drive mechanism A1-A6 to position and direct each of the first and second manipulators VA1-VA6.

*Response to Arguments*

10. Applicant's arguments filed May 3, 2004 have been fully considered but they are not persuasive.

- a. Applicant argues that Kobayashi does not relate to a link mechanism of a robot. However, Kobayashi does show an assembly that includes every structural limitation recited in the claims which can be used in the same manner recited in the functional limitations of the claims and thus, Kobayashi does in fact show a "link mechanism of a robot" at least as far as such an assembly is defined by applicant's claims. The same is true for Pritschow, Parker and Hendrickson.
- b. Applicant argues that Kobayashi fails to show the claimed invention because Kobayashi fails to show a driver. However, as noted above Kobayashi discloses a drive mechanism in col. 1, line 14.
- c. Applicant argues that Parker fails to show the claimed invention because Kobayashi fails to show a driver. However, Parker does not need to show a driver because no such "driver" is positively recited in any of the claims rejected under Parker. The same is true for Hendrickson.
- d. In response to applicant's argument that the claimed invention is patentable because it is intended to be used with a particular set of equations to determine the position of robotic equipment, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is

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capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

### *Conclusion*

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

12. This application contains claims 2, 3, 5-10, 12, 14 & 16 drawn to an invention nonelected with traverse papers filed on May 2, 2003. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.



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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can normally be reached on M-F 9:30 am to 7:00 pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703) 308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Greg Binda  
Primary Examiner  
Art Unit 3679